REMARKS

Status of the Claims

This application has been reviewed in light of the Office Action dated October 17, 2007. Claims 1-10, 12-21, and 30-33 are presented for examination. Claims 8, 30 and 32 have been canceled, without prejudice or disclaimer of subject matter. Claims 1-7, 19-21, 31 and 33 have been amended to define more clearly what Applicants regard as their invention. Claims 1, 7, and 31 are in independent form. Favorable reconsideration is requested.

Interview

Applicants would like to thank the Examiner for granting and conducting a telephonic interview in the present application with Applicants' undersigned representative on February 27, 2007. Further, Applicants appreciate the Examiner's indication that the proposed changes to Claim 7 would place that claim in condition for allowance.

It is believed that this response, in conjunction with the Examiner's Interview Summary mailed March 9, 2007, represent a complete written statement as to the substance of the interview, in accordance with M.P.E.P. § 713.04.

Rejections Under 35 U.S.C. § 112

Claims 1-10, 12-21, and 30-33 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite.

The rejections of Claims 30 and 32 have been rendered moot by the cancellation thereof.

The claims have been carefully reviewed and amended as deemed necessary to ensure that they conform fully to the requirements of Section 112, second paragraph, with special attention to the points raised in paragraph 3 of the Office Action. Specifically, Claims 1 and 31 have been amended as suggested by the Examiner to recite that an estimate of a tangential force on the vehicle wheel is obtainable based on the signal produced by the at least one first tread element. Claim 33 has been similarly amended.

As agreed during the interview, it is believed that the rejections under Section 112, second paragraph, have been obviated, and their withdrawal is therefore respectfully requested.

Rejections Based on Brazil in View of Various References in the Alternative

Claims 7, 10, 12, 16 and 17 were rejected under 35 U.S.C. § 103(a) as being obvious over Brazil 200002924 ("Brazil") in view of JP 62-6802 ("Japan '802"). Claims 7-10 and 12-17 were rejected as obvious over Brazil in view of U.S. Patent No.2,152,883 ("Eudy"), JP 6-171321 ("Japan '321"), JP 61-263807 ("Japan '807"), or JP 8-118918 ("Japan '918").

Amended Claim 7, which is now in independent form, is directed to a tire in which, *inter alia*, each of the first tread elements has a central zone surrounded by an encircling zone. The tread element has the following characteristics:

a) the surface area of the central zone is at least substantially equivalent to the surface area of the encircling zone;

b) the surface of the central zone is located at a distance from the wheel axle that is less than the distance of a surface of the encircling zone; and

c) the central zone has a resistance to a force directed perpendicular to the surface of the tread which is less than a resistance to a force directed perpendicular to the surface of the tread offered by the encircling zone.

As acknowledged in the Office Action, Brazil does not teach or suggest a tire tread having a central zone surrounded by an encircling zone. The Examiner has taken the position that one of ordinary skill in the art would have been motivated to combine Brazil's purported teaching of using a low-height pad to make tangential force measurements with one of the tread configurations in the cited secondary references, which are cited in the alternative. The rationale for the various alternative combinations hypothesized by the Examiner would have been to improve the grip of the tread configuration disclosed in Brazil.

The Examiner cited Eudy and Japan '321 as disclosing a configuration in which the surface area of the central zone is at least substantially equivalent to the surface area of the encircling zone (see Office Action at bottom of page 9), as recited in Claim 7. However, neither of these references teaches or suggests that the surface of the central zone is located at a distance from the wheel axle that is less than the distance of a surface of the encircling zone, as further recited in Claim 7.

In fact, none of the secondary references teaches or suggests the combination of features now recited in Claim 7. Thus, the combination of any of these references with Brazil, assuming such combination would be proper, would not teach or suggest the subject matter of Claim 7.

Accordingly, as agreed during the interview, it is believed that Claim 7 patentable over the cited references and is in condition for allowance.

Rejections Based on Winner

Claims 1, 6, 18-20 and 30-33 were rejected under 35 U.S.C. § 102(b) as anticipated by DE 3939917 ("Winner").

Winner, as discussed in previous Amendments, relates to a tire having numerous measurement knobs of varying angles of inclination with respect to the road surface. To estimate tangential force on the vehicle, detections from a number of such knobs are considered in combination. Winner further discloses the use of pairs of elements having the same inclination angle, but facing opposite directions.

Claim 1 has been amended to recite a plurality of first tread elements, each comprising a sensor capable of producing a signal representative of a level of tangential force in the contact surface of the respective first tread element during passage through the contact area, wherein all of the first tread elements are oriented to extend from the tire perpendicularly and are configured to slide under substantially the same conditions.

Winner simply does not teach or suggest such a configuration. Accordingly, Claim 1 is believed to be patentable over Winner. Independent Claim 31 recites features similar to those discussed above with respect to Claim 1 and therefore is also believed to be patentable over Winner for the reasons discussed above.

Rejections Based on Breuer in view of Knill and/or Kukimoto

Claims 1-6, 18-21, 30, and 30-33 were rejected under 35 U.S.C. §103(a) as being unpatentable over DE 3937966 ("Breuer") in view of at least one of U.S. Patent No. 4,319,620 ("Knill") and U.S. Patent No. 5,445,201 ("Kukimoto").

Breuer relates to a system for determining the conditions of dynamic engagement between a vehicle tire and a roadway. The tire includes a measurement sensor within a tread block or rib of the tread. The sensor detects the local stresses in circumferential, transverse and perpendicular directions as a point passes through the tire contact zone, as the tire rolls along the roadway.

Breuer does not teach or suggest placing a measurement sensor in a tread portion that slides, as claimed in Claim 1. To the contrary, Breuer relies on measurement of local tensions, stretches and deformations of a tire lug (see machine translation of Breuer), which suggests placement of the sensor in a portion that does not slide. Moreover, in the sole embodiment shown in Breuer, the measurement sensor is in the center portion of the tire tread, which is designed not to slide.

Knill discloses a tire tread having an axially central tread portion with a wet skid resistance value of 100 and outer tread portions with a wet skid resistance value of 80 to 95. This design purportedly results in a composite wet skid resistance of 90 to 100 (see col. 2, lines 33-39).

The Examiner asserts that "a 'first rolling condition' must exist in which simultaneously the outer portion 7 slides and the central portion 6 does not slide." (Office Action at page 14, first full paragraph). However, Knill does not state that there are conditions under which the outer tread portion slides whereas the central tread portion does not. Rather, Knill notes that the tread configuration results in a composite wet skid resistance for the tire as a whole. Applicants therefore respectfully traverse the Examiner's statement and request that the Examiner find support in Knill, or elsewhere in the prior art, for this hypothesis.

Even assuming, *arguendo*, that there is a condition under which a portion of Knill's tire tread would slide, whereas another portion would not, Knill provides absolutely no guidance as to the placement of a measurement sensor. As noted above, Breuer does not teach or suggest placing the measurement sensor in a tread portion that slides, but rather, shows a sensor in a central portion of the tire tread, which does not slide. Thus, the combination of Breuer and Knill, assuming such a combination would be proper, does not teach or suggest placing a measurement sensor in a tread portion that slides, as claimed in Claim 1. It is more likely that in combining Breuer and Knill, one of ordinary skill in the art would have placed the measurement sensor in the central portion of Knill, which does not slide.

Kukimoto discloses various configurations of tire treads having land portions separated by grooves that contain sacrificed tread portions. Kukimoto, like Knill, provides absolutely no guidance as to the placement of a measurement sensor. Therefore, Kukimoto does nothing to remedy the shortcomings of Breuer and Knill in this regard.

Accordingly, it is respectfully submitted that Claim 1 is patentable over Breuer, Knill, and Kukimoto, no matter how they hypothetically may be combined. Independent Claim 31 recites features similar to those discussed above with respect to Claim 1 and therefore is also believed to be patentable over Breuer, Knill, and Kukimoto for the reasons discussed above.

Remaining Dependent Claims

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the

same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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